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EXAMINER	
CHAO, MICHAEL W	

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2492	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/582,626	DRIES ET AL.	
	Examiner	Art Unit	
	Michael Chao	2492	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 November 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-26,28,30-45 and 47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-26,28,30-45 and 47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This action is in response to applicant's arguments filed 11/22/2010, which was in response to USPTO Office Action mailed 5/25/2010.

Claims 1-6, 8-26, 28, 30-45 and 47 are pending.

Response to Arguments

Applicant's arguments, see pages 11-13, filed 11/22/2010, with respect to the rejection(s) of claim(s) 1-6, 9, 11, 22, 23-25, 40-45 under Pruthi have been fully considered and are persuasive. Pruthi does not disclose the specific of Kernel memory. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Pruthi in view of Ramaswamy.

Applicant's arguments filed 11/22/2010 have been fully considered but they are not persuasive.

In response to applicant's preliminary argument (page 11) that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

The claims as presently presented have broad and varying subject matter. For instance, Applicant's general invention (claim 1) contemplates a network analyzer with a particular method of transferring data to host memory. Where embodiments (claim 8)

may include a particular type of 'next channel' data in the descriptor of an entry. Where embodiments (claim 17) include particular methods of hardware buffering involving thresholds of buffer fullness. Where embodiments (claim 32) have a particular way of linking the data entries.

References in the prior art are typically focused in their disclosure of an improvement and omit from their description methods known in the prior art. Therefore, when claims are directed to wide and varying features singular references would not recite all the elements, not because they are new and novel, but because the description would be extraneous to the invention claimed. For example a reference directed toward a network analyzer would likely not simultaneously include an improvement to hardware buffering or the method of chaining the received data packets, not because such aspects are not contemplated but because they are not directly related to the improvement disclosed. Where, as here, a multitude of elements are claimed, the number of references are a necessary incident to the manner of claiming.

Applicant’s argument (page 13) that Pruthi and Ashton are in different technical fields is not persuasive. Applicant characterizes Pruthi as involving "monitoring data on a communication line" and Ashton as a method for "transferring data between a host computer and a controller. Ashton's controller is a communication controller "Many different types of communications controllers have been used in the past to transfer data to and from a host." (Ashton 1:35). Pruthi, which monitors data on a communication line also involves a communication controller (see e.g. item 500 of

Figure 5. Moreover Pruthi involves the controller transferring data to the host computer ("the interface computer stores a set of packets in a memory of the host computer" Pruthi paragraph [0085]). Therefore, the technical field of Ashton is a subset of the technical field of Pruthi. Furthermore, Pruthi could not function without transferring data to the host computer (paragraph [0085]); therefore, the technical field of Pruthi necessarily includes the technical field of Ashton.

Applicant's argument (page 14) that Pruthi in view of Ashton in view of Gagne does not teach "adding an indicator in the descriptor associated with a received data frame indicative of the next channel on which the data frame was received . . ." is not persuasive. Applicant's specific argument is that the disclosure of Gagne differs from that claimed because claim 8 requires "an indicator within a frame descriptor for attachment to a frame". Referencing the combination discussed in claim 8; Pruthi in view of Ashton teaches descriptors with next message pointers. What Pruthi in view of Ashton is said to lack is the "next channel" indicator. Therefore, all Gagne was cited to teach was that it was known at the time of invention to use a field indicating the next channel a packet was received on, instead of referencing the next packet directly.

Although Applicant claims that the "next channel indicator bits of claim 8 [allows navigation] within the host memory without requiring access to any external component such as the 'sequencing ring 80' of Gagne"; such is not required expressly or impliedly by the claim. Rather, the claim merely recites that the addition to the descriptor is "indicative" and "can be used to merge data"; which are both broad and unspecific as to their actual application.

Further the combination as discussed with regard to claim 8 includes said “next channel” indicator within the descriptor of Pruthi. In addition, Pruthi’s indicator is stored with the data packet (A record includes an index and the packet, where the index is analogous to the claimed descriptor. Pruthi [0039] and [0046]). Applicant’s argument is not persuasive.

For clarity, Examiner notes that on page 15 and 16 it is stated that the “Examiner objects to claims" 27, 31, 35 as being obvious over the prior art. Said claims were rejected.

Applicant argues (page 15 and 16) generally that there is no reason to combine Pruthi in view of Ashton in view of Gagne because Pruthi is only a disclosure of means for monitoring data, is not persuasive. Pruthi's silence on further optimizations of data transfer (Ashton and Gagne) does not render said optimizations non-obvious, it merely implies that Pruthi did not feel such disclosure was necessary to illustrate his invention.

Applicant’s argument (page 16) that there is no disclosure of "reading the descriptor of a first data packet and in dependence on information obtained from the descriptor accessing a subsequent data packet" is not persuasive. (“a packet include a time stamp” Pruthi [0046]; see also the Figures 20+ displaying packet statistics.)(“CA initializes a next message pointer in one of the buffers associated with the message just received” Ashton column 3 line 25) ("it is important that host cpu process packets in the order in which they arrived. . ." Gagne 9:65). All the cited references are concerned in some aspect with the order of receipt.

Applicant's argument (page 16) that adding data to the descriptors is not required, is unpersuasive. More specifically, the obviousness inquiry does not involve the determination of elements that are required. Moreover, the feature was not cited as inherent.

Applicant's argument, regarding claim 35 (pages 16 and 17), that there is "no recitation of a merged data stream being created", is not persuasive. Pruthi at least discloses: ("first network interface . . . second network interface" Pruthi [0034]; "an interface number" Pruthi [0046]; "The calculation of this statistic is facilitated according to the present invention, because the stored packets are already all IP packets and are indexed by time of receipt. As such, the calculation is performed by sorting the records by index" Pruthi [0041]). Having two input interfaces collecting packets and a method for generating statistics on all packets is a merging.

Applicant's further argument (page 17) with respect to claim 35 that there is no disclosure of offset need not be addressed because claim 35 does not recite "offset". It is an unclaimed feature.

Applicant's argument with regard to claim 39 (paragraph 3 page 17) that the next message pointer is inapplicable to the material recited in claim 39, is not persuasive. Ashton discloses that a message pointer is ("A message pointer points to the beginning buffer for the next message in the linked list." Ashton 5:20). Therefore, Ashton at least teaches linking messages. Applicant's assertion that the combination of Pruthi in view of Ashton would not teach an "offset . . . of a subsequent data packet", is unpersuasive since the teachings of the linked list of messages would be applicable to the stored

packets and descriptors of Pruthi. Linked lists are well known and understood in the art and are not limited to specific implementations.

Applicant's argument with regard to claim 39 (paragraph 4 page 17) that an offset is not anticipated by pointer disclosed is Ashton is not persuasive. Applicant states that an offset is a term of art meaning a relative distance between one memory location and another and then contrasts that with a pointer to a buffer. Even if the broadest reasonable interpretation of offset was Applicant's definition that the "offset is exclusively a relative distance between one memory location and another" it is not stated what the offset is relative to. Therefore, any pointer in memory may fairly be considered an offset which is relative to some memory address. Further, offset is referred to in Applicant's specification as an "offset pointer" (page 4 paragraph 5). Applicant's disclosure with regard to an offset being a relative element is discussed in relation to the method of managing memory in the Kernel (pages 28 and 29) which is not recited in claim 39, nor can it be read into the claim by mere recitation of offset. Applicant's argument is not persuasive.

Applicant's further arguments depend on those addressed and are persuasive or not persuasive for the reasons detailed above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 9, 11, 22-24, 28, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi et al. (US 2002/0105911), in view of Ramaswamy et al. (US 6,510,164).

Concerning claims 1, 9, Pruthi teaches:

A method of transferring data from a network to a host using a network analyzer card [in which the host has a memory including kernel memory space and application memory space], the method comprising: ("data is received from the first communication line" Pruthi paragraph [0016] & [0085])

At the network analyzer, receiving a plurality of data frames from a network link;

Adding a descriptor to each frame, the descriptor including data about the frame; and ("An exemplary record having the index as a first field and the packet as a second field" Pruthi paragraph [0039])

Transferring the data frame and their attached descriptor to the kernel memory (kernel memory is a necessary incident to an operating system that would be present on the host computer of Pruthi [0085]) space within the host memory [and generating offsets such that the data transferred to the kernel space of the host memory is directly accessible to a host application]. ("the interface computer stores a set of packets in a memory of the host computer" Pruthi paragraph [0085])

Pruthi does not disclose: [in which the host has a memory including kernel memory space and application memory space] and [and generating offsets such that

the data transferred to the kernel space of the host memory is directly accessible to a host application]

Ramaswamy discloses said elements: “a user-level network interface for applications running on the switching processor 44. The user-level network interface overcomes the inefficiencies of the conventional systems discussed above. In FIG. 10, the switching processor 44 has certain network applications 65 running thereon, including the packet switching functions described above. The network applications 65 and the packet switching program have direct access to a list of buffers in the kernel memory 63. In an Ethernet network, each network interface 37 has a list of buffers associated with it. These buffers can be used to transmit data as well as receive data. A network driver 59 on the operating system 48 communicates with the network interface 37 in the manner described previously, and also has access to the buffer list in the kernel memory 63.” (Ramaswamy 13:5-20).

A person of ordinary skill in the art would have combined the specific kernel memory access system of Ramaswamy with the general packet sniffing and storage system of Pruthi (paragraph [0085]) by utilizing the improvement detailed in Ramaswamy (Ramaswamy 13:5-20).

It would have been obvious at the time the invention was made to a person of ordinary skill in the art to combine Pruthi with Ramaswamy in order to avoid the inefficiencies of transferring the data to the user level by interrupting the network application (e.g. Ramaswamy 12:60-65).

Regarding claim 23, Pruthi in view of Ramaswamy substantially teaches the limitations shown. Regrding the additional limitation of “transferring data frames to a host. . . in dependence on the meta data attached to the data frames" Pruthi in view of Ramaswamy teaches the mentioned limitation at least in the following: “each network interface 37 has a list of buffers associated with it. These buffers can be used to transmit data as well as receive data.” (Ramaswamy 13:5-20). Note that while claim 23 omits the further definition of Kernel memory the above combination also teaches the broader requirement of "region of the host buffer" since kernel memory must be a region of the host memory.

Regarding claims 2, 5, Pruthi teaches: wherein the descriptor includes a field indicative of the length of the data frame to which it is attached. (“size of packet” Pruthi paragraph [0046])

Regarding claim 3, Pruthi teaches: wherein the descriptor includes a field indicative of the order in which the data frame to which the descriptor is attached was received with respect to other received data frames. (“1,2,3,” Pruthi paragraph [0046])

Regarding claim 4, Pruthi teaches: wherein the descriptor includes a field indicative of the channel from which the data frame to which the descriptor is attached was received. (“interface number” Pruthi paragraph [0046])

Regarding claim 11, Pruthi teaches: an input buffer upstream with respect to the descriptor adder, the input buffer being configured and arranged to receive and

temporarily store plural data frames from the network link. (“Short-term memory” Pruthi paragraph [0044])

Regarding claim 22, Pruthi teaches a timestamp in paragraph [0046].

Regarding claim 24, Pruthi teaches: wherein the receiver and the descriptor adder are implemented in hardware. (Pruthi paragraph [0033])

Regarding claims 28, Pruthi teaches: a central processing unit; (“an exemplary network monitor is implemented with a host computer having an interface computer on a network interface card” Pruthi paragraph [0082]) and, A memory to receive and store data packets received from the network, the host being arranged such that the central processing unit is not interrupted when every data packet is received in the memory from the network analyzer card. (“In an exemplary embodiment, the interface computer stores a set of packets in a memory of the host computer by a direct memory access (DMA) operation and then interrupts the host computer to indicate the transfer of packets.” Pruthi paragraph [0085])

Regarding claim 30, Pruthi teaches: in which the network analyzer card is arranged and configured to transfer data packets to a region of the host memory directly accessible to a host application. (“data stored in the memories may later be retrieved for analysis or for one of the applications” Pruthi paragraph [0044])

Claims 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi, in view of Ramaswamy et al. (US 6,510,164), in view of Ashton et al. (US 5,317,692).

Regarding claim 6, Pruthi does not explicitly disclose that pointers are stored in the host memory which are indicative of where corresponding stored. Ashton discloses such a pointer, “In the case of a read operation, the linked list of buffers is established by the CCU 114 and the CA 112 administers the transfer of all data in the list in accordance with the invention.” (Ashton Column 5 line 45). A person of ordinary skill in the art would have modified the invention of Pruthi with the pointers of Ashton by chaining received packets. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the invention in order to transfer multiple data elements.

Claims 8, 10, 12, 14, 26, 31, 33-39 and 47, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi, in view of Ashton et al. (US 5,317,692), in view of Gagne et al. (U 5,303,347).

With respect to claims 8, 26, 31, 35, 39, Pruthi teaches:

A method of transferring multi-channel data received from a network to a host using a network analyzer card, the network analyzer card comprising: a receiver for receiving plural data frames from a network link on a first channel and a receiver for receiving plural data frames from the network link on a second channel;

("first network interface . . . second network interface" Pruthi paragraph [0034]) a descriptor adder configured and arranged to add a descriptor to at least some of the data frames received on the first channel and a descriptor adder configured and arranged to add a descriptor to at least some of the data frames received on the second channel, the descriptors including data about the data frame to which it is attached, the method comprising: ("size of packet" Pruthi paragraph [0046])

receiving data from first and second channels on the receivers of the network analy[z]er card; and, ("An exemplary record having the index as a first field and the packet as a second field" Pruthi paragraph [0039])

Pruthi does not teach:

adding an indicator in the descriptor associated with received data frames indicative of the next channel on which a data frame was received, whereby when stored in an associated host memory said indicators can be used to merge data from said first and second channels in a desired order.

Ashton teaches storing an indicator to the next packet, "when an end-of-message is detected, the CA initializes a next message pointer in one of the buffers associated with the message just received" (Ashton column 3 line 25). A person of ordinary skill in the art would have modified the system of Pruthi with the pointers of Ashton by including the next message pointer of Ashton in the index field of Pruthi. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Pruthi with the pointers in order to determine the order of the messages and or to link quickly to the next item in the list.

Further Pruthi in view of Ashton does not explicitly disclose a 'next channel' indicator.

Gagne discloses such a next channel indicator, "Ring identifiers 81c and 82c are fields which indicate which of receive rings 50, 50, and 70 contain the ring entry corresponding to the next sequentially received packet" (Gagne column 5 line 10). A person of ordinary skill in the art would have modified the combination of Pruthi in view of Ashton by including a 'next ring' entry in the index of Pruthi and having separate buffers for the individual input streams. Thereby allowing the multiple buffers to allow processing of "packets in the order in which they arrived." (Gagne column 9 line 66). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the combination in order to allow efficient processing of multiple packet flows in the order in which they were received (Gagne 9:65).

Regarding claims 10, Pruthi teaches: wherein the descriptor includes a field indicative of the length of the data frame to which it is attached. ("size of packet" Pruthi paragraph [0046])

Regarding claim 12, Pruthi teaches a timestamp in paragraph [0046].

Regarding claim 14, Pruthi teaches a packet buffer. ("Short-term memory" Pruthi paragraph [0044])

Regarding claim 33, Pruthi teaches: when reading the descriptor of the first data packet, obtaining information about the channel from which the data was received by the host. ("interface number" Pruthi paragraph [0046])

Regarding claims 34, 36, 37, Pruthi in view of Ashton in view of Gagne teaches: reading a Next Channel Indicator bit stored in the descriptor and accessing a subsequent data packet in dependence on the next channel indicator bit. (“Ring identifiers 81c and 82c are fields which indicate which of receive rings 50, 50, and 70 contain the ring entry corresponding to the next sequentially received packet” Gagne column 5 line 10). While Pruthi in view of Ashton in view of Gagne does not explicitly say that ring identifiers are ‘bits’, a person of common knowledge in the art knows that addressing only requires a single bit to determine two different options, and two bits for up to four different options. In the case of two buffers only one bit is used to actually determine the difference between which 'ring' the next sequential packet would reside in. Therefore, even if the ‘Ring identifier’ 81x should be a field of larger than 1 byte in length, only one bit would be used for the combination above, where there exist only two input buffers.

Regarding claim 38, Pruthi in view of Ashton teaches: the location of data packets in the host memory is stored in an offset list containing a list of offsets used for navigation though the host memory. (See Ashton, front page).

Regarding claim 47, Pruthi in view of Ashton teaches: in which the step of reading the descriptor comprises reading a descriptor including the location of the start of a subsequent data packet. (“when an end-of-message is detected, the CA initializes a next message pointer in one of the buffers associated with the message just received” Ashton column 3 line 25). Note the combination above includes the pointer in the index field of a received packet record.

Claim 32, is rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi, in view of Ashton, in view of Gagne, in view of Grover et al. (US 5,497,404).

Regarding claim 32, Pruthi in view of Ashton in view of Gagne does not explicitly teach using the length of the first data packet to locate a subsequent data packet in the memory. Grover discloses such a feature, “A subsequent data packet position indicated by the next data packet position indicator is compared to a subsequent data packet position indicated by current data packet length information to determine if a correspondence exists. If so, the current data packet length information is used as a pointer to the subsequent data packet.” (Grover column 4 line 5). A person of ordinary skill would have modified the invention of Ashton, in view of Gagne with the length pointer of Grover by conditionally using packet length as the next packet pointer. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the combination in order to save memory space when redundant data is present.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi, Pruthi, in view of Ashton, in view of Gagne, in view of ‘Tcl Clock’.

With regard to claim 13, Pruthi in view of Ashton in view of Gagne does not disclose that his timestamp can be a variable format. Tcl Clock discloses variable timestamp formats. A person of ordinary skill in the art would have modified the combination with variable timestamps. It would have been obvious at the time the

invention was made to a person of ordinary skill in the art to modify in order to account for varying desired time resolutions.

Claims 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi, in view of Ashton, in view of Gagne in view of Katzman et al. (US 4,228,496).

Regarding claim 15, Pruthi in view of Ashton, in view of Gagne does not explicitly disclose an input and output buffer. Katzman discloses such input and output buffers, See e.g. Figure 22. A person of ordinary skill in art would have modified the invention of Pruthi in view of Ashton in view of Gagne with the IO buffers of Katzman by including buffers on the devices memory. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to include IO buffers on the interfaces memory in order to synchronize data transfers over internal or external busses.

Regarding claim 16, Pruthi, in view of Ashton, in view of Gagne in view of Katzman teaches transferring data to the output buffer. (“The output of the stress counter is decoded, and any one of the decoded values may be used to specify that the buffer is at a threshold depth” Katzman column 47 line 27).

Claims 17, 18, 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi, in view of Ashton, in view of Gagne in view of Katzman, in view of Kim et al. (US 5,859,846).

Regarding claim 17, Pruthi, in view of Ashton, in view of Gagne in view of Katzman teaches: configured and arranged such that in use data is transferred from the

packet buffer to the packet buffer output buffer when the following conditions are satisfied:

(a) packet buffer is determined to be not empty

AND

(b) (input buffer is determined to be not full) OR (packet buffer is determined to be full) ("The output of the stress counter is decoded, and any one of the decoded values may be used to specify that the buffer is at a threshold depth" Katzman column 47 line 27). Pruthi, in view of Ashton, in view of Gagne, in view of Katzman does not explicitly disclose that the transfer is blocked on an output buffer determination. Kim discloses such a feature. "output buffer full state flag C10 to the multiplexing controller 26 to temporarily stop the multiplexing operation" (Kim column 13 line 28). A person of ordinary skill in the art would have modified Pruthi in view of Katzman with Kim by providing an indicator signaling when the output buffer was full. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to halt transmission of data when the buffer is full to prevent overwriting of stored data.

Regarding claim 18, Pruthi, in view of Ashton, in view of Gagne, in view of Katzman teaches: whether or not the packet buffer is determined to be full or not full is determined by an upper threshold ("The output of the stress counter is decoded, and any one of the decoded values may be used to specify that the buffer is at a threshold depth" Katzman column 47 line 27) and a lower threshold, respectively. ("Thus, the STI signal is asserted when the buffer 189 reaches a condition of minimal stress" Katzman column 47 line 45)

Regarding claim 19, Pruthi, in view of Ashton, in view of Gagne, in view of Katzman teaches: in which the upper and lower thresholds are variable to control data input to and output from the packet buffer. ("wire jumpers are used to select one of sixteen possible stress values" Katzman column 47 line 29). Pruthi in view of Katzman in view of Kim does not disclose that the lower threshold is adjustable. However, since the upper threshold is adjustable, also making the lower threshold adjustable is obvious. It would therefore be obvious to one of ordinary skill in the art to make the simple substitution of the nonadjustable lower threshold to an adjustable lower threshold, in a manner similar to the upper threshold. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to make the lower threshold adjustable in order to specify the nature of the burst transfer.

Claims 20, 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi, in view of Ashton, in view of Gagne, in view of Katzman, in view of Eckberg et al. (US 4,769,810).

Regarding claim 20, Pruthi, in view of Ashton, in view of Gagne, in view of Katzman does not teach: a bandwidth controller, arranged and configured to force a received data frame to be dropped when one or more criteria are satisfied. Eckberg teaches such a limitation, as seen on Figure 7. A person of ordinary skill in the art would have modified Pruthi, in view of Ashton, in view of Gagne, in view of Katzman with the congestion control of Eckberg by providing the logic of Eckberg to handle an overburdened system. It would have been obvious at the time the invention was made

to a person of ordinary skill in the art to modify the combination to efficiently handle congestion on the system.

Regarding claim 21, Pruthi teaches a controller implemented in hardware. (Pruthi paragraph [0033])

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi, in view of Ramaswamy et al. (US 6,510,164), in view of Dunlop et al. (US 6,721,872).

Regarding claim 25, Pruthi in view of Ramaswamy does not teach: a network analyzer card implemented in an integrated circuit or a Field Programmable Gate Array. Dunlop discloses a network interface implemented in an FPGA. A person of ordinary skill would have modified Pruthi in view of Ramaswamy with Dunlop by using an FPGA to design the network analyzer. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Pruthi in view of Ramaswamy with an FPGA in order to accommodate multiple dynamic protocol types.

Claims 40-45, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruthi, in view of Ramaswamy et al. (US 6,510,164), in view of Eckberg et al. (US 4,769,810).

Regarding claim 40, Pruthi teaches: A host for connection to network, the host comprising a network analyzer card, a memory and a central processing unit, wherein the network analyzer card is arranged and configured to receive data frames from the

network (“data is received from the first communication line” Pruthi paragraph [0016] & [0085]).

Pruthi in view of Ramaswamy does not teach: a hardware component configured to cause a received frame to be dropped in dependence on the amount of data stored in the host memory and/or a memory provided on the network analyzer card.

Eckberg teaches such an element in Figure 7.

A person of ordinary skill in the art would have modified Pruthi in view of Ramaswamy with the congestion control of Eckberg by providing the logic of Eckberg to handle an overburdened system. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the combination to efficiently handle congestion on the system.

Regarding claim 41, Pruthi teaches: wherein the network analyzer card is arranged and configured to add a descriptor to received data frames, the descriptor including a hardware-generated indicator for use in determination of the order of receipt of a data frame with respect to other received data frames. (“Examples of an index corresponding to a packet include a time stamp to indicate the time it was received by the network monitor” Pruthi [0046])

Regarding claim 42, Pruthi teaches: in which the network analyzer card is arranged and configured to add a timestamp to received data frames. (Pruthi paragraph [0046])

Regarding claim 43, Pruthi teaches: in which the network analyzer card is arranged and configured to transfer data packets to an area of the host memory directly

accessible to an application running on the host. (“data stored in the memories may later be retrieved for analysis or for one of the applications” Pruthi paragraph [0044]).

Regarding claim 44, Pruthi teaches: in which the network analyzer card is arranged and configured to transfer data packets to the host memory, where the number of data packets transferred in a single data transfer operation is variable. (“In an exemplary embodiment, the interface computer stores a set of packets in a memory of the host computer by a direct memory access (DMA) operation and then interrupts the host computer to indicate the transfer of packets.” Pruthi paragraph [0085])

Regarding claim 45, Pruthi teaches: in which the host central processing unit is interrupted due to receipt of data packets in the host memory when a sufficient number of data packets to fill a section of the host memory has been received (“In an exemplary embodiment, the interface computer stores a set of packets in a memory of the host computer by a direct memory access (DMA) operation and then interrupts the host computer to indicate the transfer of packets.” Pruthi paragraph [0085]) or if not further packets have been received in the host memory in a determined time period.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Chao whose telephone number is (571)270-5657. The examiner can normally be reached on 8-4 Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on (571)272-6776. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. C./
Examiner, Art Unit 2492

/Philip J Chea/
Primary Examiner, Art Unit 2492